

SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> POLYNUCLEOTIDE ENCODING A NOVEL HUMAN POTASSIUM CHANNEL BETA-SUBUNIT, K+betaM2

<130> D0076 NP

<150> US 60/263,872

<151> 2001-01-24

<150> US 60/269,794

<151> 2001-02-14

<160> 73

<170> PatentIn version 3.0

<210> 1

<211> 3468

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (515)..(1798)

<400> 1

caagcactgt gctaaagtgt tttcatatg tcatgaaaag ttgtgccaga aaattatggt 60

ttgaacatgg gcagttttct cctaccgtca gctatatcca caagcatcac atgaagtgga 120

gatctggcag ctctgtgtat ttcagtcaag ttccacaatg aaacctgaca ataatggtaa 180

aaaccaatac ggacatctga gtaactgggg aattggcctg ccttgcatgt gagcttgatg 240

gaagattgga tatagacgag ttgattatat tttatgaagt agcagctcac taccatccac 300

catccagggt ttaaactact tttcagcat cacttcacct gtggactctt atacattttg 360

atttcttggg ggaaaaatac tgggataaga ggaggtcatt ttttaataag ttagcatcct 420

tttccctttc ttacaagttg atccaaagga taaggctgtg actccattgg attgcacctt 480

taaatcaaaa tagcagcagc agaagaaagg gaca atg gct ctg agt gga aac tgt 535

Met Ala Leu Ser Gly Asn Cys
1 5

agt cgt tat tat cct cga gaa caa ggg tcc gca gtt ccc aac tcc ttc 583

Ser Arg Tyr Tyr Pro Arg Glu Gln Gly Ser Ala Val Pro Asn Ser Phe
10 15 20

cct gag gtg gta gag ctg aat gtc ggg ggt caa gtt tat ttt act cgc 631

Pro Glu Val Val Glu Leu Asn Val Gly Gly Gln Val Tyr Phe Thr Arg
25 30 35

4056884.012402

cat tcc aca ttg ata agc atc cct cat tcc ctc ctg tgg aaa atg ttt	679
His Ser Thr Leu Ile Ser Ile Pro His Ser Leu Leu Trp Lys Met Phe	
40 45 50 55	
tcc cca aag aga gac acg gct aat gat cta gcc aag gac tcc aag gga	727
Ser Pro Lys Arg Asp Thr Ala Asn Asp Leu Ala Lys Asp Ser Lys Gly	
60 65 70	
agg ttt ttc att gac aga gat gga ttc ttg ttc cgt tat att ctg gac	775
Arg Phe Phe Ile Asp Arg Asp Gly Phe Leu Phe Arg Tyr Ile Leu Asp	
75 80 85	
tat ctc agg gac agg cag gtg gtc ctg cct gat cac ttt cca gaa aaa	823
Tyr Leu Arg Asp Arg Gln Val Val Leu Pro Asp His Phe Pro Glu Lys	
90 95 100	
gga aga ctg aaa agg gaa gct gaa tac ttc cag ctc cca gac ttg gtc	871
Gly Arg Leu Lys Arg Glu Ala Glu Tyr Phe Gln Leu Pro Asp Leu Val	
105 110 115	
aaa ctc ctg acc ccc gat gaa atc aag caa agc cca gat gaa ttc tgc	919
Lys Leu Leu Thr Pro Asp Glu Ile Lys Gln Ser Pro Asp Glu Phe Cys	
120 125 130 135	
cac agt gac ttt gaa gat gcc tcc caa gga agc gac aca aga atc tgc	967
His Ser Asp Phe Glu Asp Ala Ser Gln Gly Ser Asp Thr Arg Ile Cys	
140 145 150	
ccc cct tcc tcc ctg ctc cct gcc gac cgc aag tgg ggt ttc att act	1015
Pro Pro Ser Ser Leu Leu Pro Ala Asp Arg Lys Trp Gly Phe Ile Thr	
155 160 165	
gtg ggt tac aga gga tcc tgc acc ttg ggc aga gag gga cag gca gat	1063
Val Gly Tyr Arg Gly Ser Cys Thr Leu Gly Arg Glu Gly Gln Ala Asp	
170 175 180	
gcc aag ttt cgg aga gtt ccc cgg att ttg gtt tgt gga agg att tcc	1111
Ala Lys Phe Arg Arg Val Pro Arg Ile Leu Val Cys Gly Arg Ile Ser	
185 190 195	
ttg gca aaa gaa gtc ttt gga gaa act ttg aat gaa agc aga gac cct	1159
Leu Ala Lys Glu Val Phe Gly Glu Thr Leu Asn Glu Ser Arg Asp Pro	
200 205 210 215	
gat cga gcc cca gaa aga tac acc tcc aga ttt tat ctc aaa ttc aag	1207
Asp Arg Ala Pro Glu Arg Tyr Thr Ser Arg Phe Tyr Leu Lys Phe Lys	
220 225 230	
cac ctg gaa agg gct ttt gat atg ttg tca gag tgt gga ttc cac atg	1255
His Leu Glu Arg Ala Phe Asp Met Leu Ser Glu Cys Gly Phe His Met	
235 240 245	
gtg gcc tgt aac tca tgg gtg aca gca tct ttc atc aac caa tat aca	1303
Val Ala Cys Asn Ser Ser Val Thr Ala Ser Phe Ile Asn Gln Tyr Thr	
250 255 260	
gat gac aag atc tgg tca agc tac act gaa tat gtc ttc tac cgt gag	1351

[illegible]

705684.012402

```

gaatggcaga tttatatgac ttttactca aatctatatg tgccagttta tattgactcc 2318
gtatgcatga gtatttgtgc aacacaagca caactaagta tgtatataca catgacgcac 2378
acgatgccag ggcctagacc tccaagggc tgtgctcctg ctcccagcag ccctctctta 2438
gaatatttca gatggatgag cttctgactc tttcttaaaa ttcttttggg aagatttccc 2498
agcctttctt cacaacactt tctaacatca aatgactctc atcatcaaca aattgtattc 2558
cttattgtga aattaatacc ctcaggctcc attttactgc ttgctcttt gtctgcatta 2618
agagaggatg aggagagctg gtcaaacatt ccttgtgtta aaaaaatcaa acattcatat 2678
ccacaaaatt ttctgctaaa tgactccaca ctcagccttc tctaccctga actgaattat 2738
cacccttttc tccatgtttt cagagtctt actgccaca gtttaatggg gtggcctttc 2798
cacataatcc acattaagtt ctgtgttctt gtgtgttgtt ggaactaagg acaacacaca 2858
gtacttgaat aagggtccgg ccttttgttt gttttagaga aagttgtatt ccacacacaa 2918
cctaataatt tcttataaaa attttaaact acaaagctac atttttactt gcttgtagcc 2978
gtttttgttt gcctttggga ttcgggcttt ggctgtgccc atgctaggat ttagctgtgt 3038
catttttatg atgtctgtaa caaccaaca aggtaactga agctccagag ttaaggtttc 3098
agatttctaa atgaaactat ctttttcaat tacatcctga cttgtataga cacagccaaa 3158
aagaaaactgt taatagccat ccgtccatgt aactctgtat ttactaagg taccaatagc 3218
tctttcatag acttgtgcta caagaagggt aaaagaccag ttttattttc agcattcctc 3278
atgcatttca gtggtaacca aaaaataatt tgtcaattaa tagttgtgtg ccaagcactc 3338
ctaatttgtt ttattgcgtg tgtgtgcatg tgtgtatgtg tatcacaggt aataaaggca 3398
attggatgat taaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3458
aaaaaaaaaa 3468

```

<210> 2
 <211> 428
 <212> PRT
 <213> Homo sapiens

<400> 2

Met Ala Leu Ser Gly Asn Cys Ser Arg Tyr Tyr Pro Arg Glu Gln Gly
 1 5 10 15

Ser Ala Val Pro Asn Ser Phe Pro Glu Val Val Glu Leu Asn Val Gly
 20 25 30

204270-10099007

Gly	Gln	Val	Tyr	Phe	Thr	Arg	His	Ser	Thr	Leu	Ile	Ser	Ile	Pro	His	35	40	45
Ser	Leu	Leu	Trp	Lys	Met	Phe	Ser	Pro	Lys	Arg	Asp	Thr	Ala	Asn	Asp	50	55	60
Leu	Ala	Lys	Asp	Ser	Lys	Gly	Arg	Phe	Phe	Ile	Asp	Arg	Asp	Gly	Phe	65	70	75
Leu	Phe	Arg	Tyr	Ile	Leu	Asp	Tyr	Leu	Arg	Asp	Arg	Gln	Val	Val	Leu	85	90	95
Pro	Asp	His	Phe	Pro	Glu	Lys	Gly	Arg	Leu	Lys	Arg	Glu	Ala	Glu	Tyr	100	105	110
Phe	Gln	Leu	Pro	Asp	Leu	Val	Lys	Leu	Leu	Thr	Pro	Asp	Glu	Ile	Lys	115	120	125
Gln	Ser	Pro	Asp	Glu	Phe	Cys	His	Ser	Asp	Phe	Glu	Asp	Ala	Ser	Gln	130	135	140
Gly	Ser	Asp	Thr	Arg	Ile	Cys	Pro	Pro	Ser	Ser	Leu	Leu	Pro	Ala	Asp	145	150	155
Arg	Lys	Trp	Gly	Phe	Ile	Thr	Val	Gly	Tyr	Arg	Gly	Ser	Cys	Thr	Leu	165	170	175
Gly	Arg	Glu	Gly	Gln	Ala	Asp	Ala	Lys	Phe	Arg	Arg	Val	Pro	Arg	Ile	180	185	190
Leu	Val	Cys	Gly	Arg	Ile	Ser	Leu	Ala	Lys	Glu	Val	Phe	Gly	Glu	Thr	195	200	205
Leu	Asn	Glu	Ser	Arg	Asp	Pro	Asp	Arg	Ala	Pro	Glu	Arg	Tyr	Thr	Ser	210	215	220
Arg	Phe	Tyr	Leu	Lys	Phe	Lys	His	Leu	Glu	Arg	Ala	Phe	Asp	Met	Leu	225	230	235
Ser	Glu	Cys	Gly	Phe	His	Met	Val	Ala	Cys	Asn	Ser	Ser	Val	Thr	Ala	245	250	255

204210 488500

Ser Phe Ile Asn Gln Tyr Thr Asp Asp Lys Ile Trp Ser Ser Tyr Thr
260 265 270

Glu Tyr Val Phe Tyr Arg Glu Pro Ser Arg Trp Ser Pro Ser His Cys
275 280 285

Asp Cys Cys Cys Lys Asn Gly Lys Gly Asp Lys Glu Gly Glu Ser Gly
290 295 300

Thr Ser Cys Asn Asp Leu Ser Thr Ser Ser Cys Asp Ser Gln Ser Glu
305 310 315 320

Ala Ser Ser Pro Gln Glu Thr Val Ile Cys Gly Pro Val Thr Arg Gln
325 330 335

Thr Asn Ile Gln Thr Leu Asp Arg Pro Ile Lys Lys Gly Pro Val Gln
340 345 350

Leu Ile Gln Gln Ser Glu Met Arg Arg Lys Ser Asp Leu Leu Arg Ile
355 360 365

Leu Thr Ser Gly Ser Arg Glu Ser Asn Met Ser Ser Lys Lys Lys Ala
370 375 380

Val Lys Glu Lys Leu Ser Ile Glu Glu Glu Leu Glu Lys Cys Ile Gln
385 390 395 400

Asp Phe Leu Lys Lys Lys Ile Pro Asp Arg Phe Pro Glu Arg Lys His
405 410 415

Pro Trp Gln Ser Glu Leu Leu Arg Lys Tyr His Leu
420 425

<210> 3

<211> 769

<212> DNA

<213> Homo sapiens

<400> 3

aggctatittt ttaataagtt agcatccttt tcccttttctt acaagttgat ccaaaggata 60

aggctgtgac tccattggat tgcaccttta aatcaaata gcagcagcag aagaaagga 120

caatggctct gaggtaaac tgtagtcgtt attatcctcg agaacaagg tccgcagttc 180

ccaactcctt cctgaggtg gtagagctga atgtcggggg tcaagtttat ttactcgcc 240

204210-133500

attccacatt gataagcatc cctcattccc tctgtggaa aatgttttcc ccaaagagag 300
 acacggctaa tgatctagcc aaggactcca agggaaggtt tttcattgac agagatggat 360
 tcttgttccg ttatattctg gactatctca gggacaggca ggtggtcctg cctgatcact 420
 ttccagaaaa aggaagactg aaaaggggaag ctgaatactt ccagctccca gacttgggtca 480
 aactcctgac ccccgatgaa atcaagcaaa gccagatga attctgccac agtgactttg 540
 aagatgcctc ccaaggaagc gacacaagaa tctgcccccc ttcctccctg ctccctgccg 600
 accgcaagtg gggtttcatt actgtgggtt acagaggatc ctgcaccttg ggcagagagg 660
 gacaggcaga tgccaagttt cggagagttc cccggatttt ggtttgtgga aggatttcct 720
 tggcaaaaga agtcttttga gaaactttga atgaaagcag agaccctga 769

<210> 4
 <211> 237
 <212> PRT
 <213> Homo sapiens

<400> 4

Met Asp Asn Gly Asp Trp Gly Tyr Met Met Thr Asp Pro Val Thr Leu
 1 5 10 15
 Asn Val Gly Gly His Leu Tyr Thr Thr Ser Leu Thr Thr Leu Thr Arg
 20 25 30
 Tyr Pro Asp Ser Met Leu Gly Ala Met Phe Gly Gly Asp Phe Pro Thr
 35 40 45
 Ala Arg Asp Pro Gln Gly Asn Tyr Phe Ile Asp Arg Asp Gly Pro Leu
 50 55 60
 Phe Arg Tyr Val Leu Asn Phe Leu Arg Thr Ser Glu Leu Thr Leu Pro
 65 70 75 80
 Leu Asp Phe Lys Glu Phe Asp Leu Leu Arg Lys Glu Ala Asp Phe Tyr
 85 90 95
 Gln Ile Glu Pro Leu Ile Gln Cys Leu Asn Asp Pro Lys Pro Leu Tyr
 100 105 110
 Pro Met Asp Thr Phe Glu Glu Val Val Glu Leu Ser Ser Thr Arg Lys
 115 120 125
 Leu Ser Lys Tyr Ser Asn Pro Val Ala Val Ile Ile Thr Gln Leu Thr
 130 135 140
 Ile Thr Thr Lys Val His Ser Leu Leu Glu Gly Ile Ser Asn Tyr Phe
 145 150 155 160

14055004 402402

Thr Lys Trp Asn Lys His Met Met Asp Thr Arg Asp Cys Gln Val Ser
165 170 175

Phe Thr Phe Gly Pro Cys Asp Tyr His Gln Glu Val Ser Leu Arg Val
180 185 190

His Leu Met Glu Tyr Ile Thr Lys Gln Gly Phe Thr Ile Arg Asn Thr
195 200 205

Arg Val His His Met Ser Glu Arg Ala Asn Glu Asn Thr Val Glu His
210 215 220

Asn Trp Thr Phe Cys Arg Leu Ala Arg Lys Thr Asp Asp
225 230 235

<210> 5
<211> 228
<212> PRT
<213> Drosophila melanogaster

<400> 5

Met Pro Glu Ile Ile Glu Leu Asn Val Gly Gly Val Ser Tyr Thr Thr
1 5 10 15

Thr Leu Ala Thr Leu Leu Gln Asp Lys Ser Thr Leu Leu Ala Glu Leu
20 25 30

Phe Gly Glu Gly Arg Asp Ser Leu Ala Lys Asp Ser Lys Gly Arg Tyr
35 40 45

Phe Leu Asp Arg Asp Gly Val Leu Phe Arg Tyr Ile Leu Asp Phe Leu
50 55 60

Arg Asp Lys Ala Leu His Leu Pro Glu Gly Phe Arg Glu Arg Gln Arg
65 70 75 80

Leu Leu Arg Glu Ala Glu His Phe Lys Leu Thr Ala Met Leu Glu Cys
85 90 95

Ile Arg Ser Glu Arg Asp Ala Arg Pro Pro Gly Cys Ile Thr Ile Gly
100 105 110

Tyr Arg Gly Ser Phe Gln Phe Gly Lys Asp Gly Leu Ala Asp Val Lys
115 120 125

Phe Arg Lys Leu Ser Arg Ile Leu Val Cys Gly Arg Val Ala Gln Cys
130 135 140

Arg Glu Val Phe Gly Asp Thr Leu Asn Glu Ser Arg Asp Pro Asp His
145 150 155 160

Gly Gly Thr Asp Arg Tyr Thr Ser Arg Phe Phe Leu Lys His Cys Tyr
165 170 175

Ile Glu Gln Ala Phe Asp Asn Leu His Asp His Gly Tyr Arg Met Ala
180 185 190

Gly Ser Cys Gly Ser Gly Thr Ala Gly Ser Ala Ala Glu Pro Lys Pro
195 200 205

Gly Val Asp Thr Glu Glu Asn Arg Trp Asn His Tyr Asn Glu Phe Val
210 215 220

Phe Ile Arg Asp
225

<210> 6
<211> 190
<212> PRT
<213> Caenorhabditis elegans

<400> 6

Met Thr Ser Val Glu Asp Val Ile Thr Leu Asn Val Gly Gly Thr Met
1 5 10 15

Tyr Thr Thr Thr Arg Ser Thr Leu Ser Lys Glu Thr Asp Thr Leu Leu
20 25 30

Ala Asn Ile Ala Ser Gly Ser Leu Ser Glu Asp Glu Gln Ala Asn Val
35 40 45

Val Thr Leu Pro Asp Gly Thr Leu Phe Val Asp Arg Asp Gly Pro Leu
50 55 60

Phe Ala Tyr Val Leu His Phe Leu Arg Thr Asp Lys Leu Ser Leu Pro
65 70 75 80

Glu Gln Phe Arg Glu Val Ala Arg Leu Lys Asp Glu Ala Asp Phe Tyr
85 90 95

Arg Leu Glu Arg Phe Ser Thr Leu Leu Ser Asn Ala Ser Ser Ile Ser
100 105 110

Pro Arg Pro Arg Thr Ala Asn Gly Tyr Asn Thr Ile Thr Ser Gly Ala
115 120 125

Glu Thr Gly Gly Tyr Ile Thr Leu Gly Tyr Arg Gly Thr Phe Ala Phe
130 135 140

Gly Arg Asp Gly Gln Ala Asp Val Lys Phe Arg Lys Leu His Arg Ile
145 150 155 160

Leu Val Cys Gly Arg Ala Thr Leu Cys Arg Glu Val Phe Ala Asp Thr
165 170 175

Leu Asn Glu Ser Arg Asp Pro Gly Gly Pro Asp Asp Gly Glu
180 185 190

<210> 7
<211> 256
<212> PRT
<213> Homo sapiens

10556834-012402

<220>
 <221> variant
 <222> (15)..(15)
 <223> wherein "Xaa" is unknown.

<400> 7

Met	Ser	Arg	Pro	Leu	Ile	Thr	Arg	Ser	Pro	Ala	Ser	Pro	Leu	Xaa	Asn
1				5					10					15	
Gln	Gly	Ile	Pro	Thr	Pro	Ala	Gln	Leu	Thr	Lys	Ser	Asn	Ala	Pro	Val
			20					25					30		
His	Ile	Asp	Val	Gly	Gly	His	Met	Tyr	Thr	Ser	Ser	Leu	Ala	Thr	Leu
		35					40					45			
Thr	Lys	Tyr	Pro	Glu	Ser	Arg	Ile	Gly	Arg	Leu	Phe	Asp	Gly	Thr	Glu
	50					55					60				
Pro	Ile	Val	Leu	Asp	Ser	Leu	Lys	Gln	His	Tyr	Phe	Ile	Asp	Arg	Asp
65					70					75					80
Gly	Gln	Met	Phe	Arg	Tyr	Ile	Leu	Asn	Phe	Leu	Arg	Thr	Ser	Lys	Leu
				85					90					95	
Leu	Ile	Pro	Asp	Asp	Phe	Lys	Asp	Tyr	Thr	Leu	Leu	Tyr	Glu	Glu	Ala
			100					105					110		
Lys	Tyr	Phe	Gln	Leu	Gln	Pro	Met	Leu	Leu	Glu	Met	Glu	Arg	Trp	Lys
		115					120					125			
Gln	Asp	Arg	Glu	Thr	Gly	Arg	Phe	Ser	Arg	Pro	Cys	Glu	Cys	Leu	Val
	130					135					140				
Val	Arg	Val	Ala	Pro	Asp	Leu	Gly	Glu	Arg	Ile	Thr	Leu	Ser	Gly	Asp
145					150					155					160
Lys	Ser	Leu	Ile	Glu	Glu	Val	Phe	Pro	Glu	Ile	Gly	Asp	Val	Met	Cys
				165					170					175	
Asn	Ser	Val	Asn	Ala	Gly	Trp	Asn	His	Asp	Ser	Thr	His	Val	Ile	Arg
			180					185					190		
Phe	Pro	Leu	Asn	Gly	Tyr	Cys	His	Leu	Asn	Ser	Val	Gln	Val	Leu	Glu
		195					200					205			
Arg	Leu	Gln	Gln	Arg	Gly	Phe	Glu	Ile	Val	Gly	Ser	Cys	Gly	Gly	Gly
	210					215					220				
Val	Asp	Ser	Ser	Gln	Phe	Ser	Glu	Tyr	Val	Leu	Arg	Arg	Glu	Leu	Arg
225					230					235					240
Arg	Thr	Pro	Arg	Val	Pro	Ser	Val	Ile	Arg	Ile	Lys	Gln	Glu	Pro	Leu
				245					250					255	

1005684-012402

10056884.012432

<210> 8
<211> 80
<212> DNA
<213> Artificial

<220>
<223> Synthetic Oligonucleotide Modified To Contain Biotin at the 5 Prime En

<400> 8
tgggagctgg aagtattcag cttccctttt cagtcttcct ttttctggaa agtgatcagg 60
caggaccacc tgcctgtccc 80

<210> 9
<211> 20
<212> DNA
<213> Homo sapiens

<400> 9
tactcgccat tccacattga 20

<210> 10
<211> 20
<212> DNA
<213> Homo sapiens

<400> 10
attcatctgg gctttgcttg 20

<210> 11
<211> 14
<212> PRT
<213> Homo sapiens

<400> 11

Met Ala Leu Ser Gly Asn Cys Ser Arg Tyr Tyr Pro Arg Glu
1 5 10

<210> 12
<211> 14
<212> PRT
<213> Homo sapiens

<400> 12

Phe Gly Glu Thr Leu Asn Glu Ser Arg Asp Pro Asp Arg Ala
1 5 10

<210> 13
<211> 14
<212> PRT
<213> Homo sapiens

4056384.012402

<400> 13

His Met Val Ala Cys Asn Ser Ser Val Thr Ala Ser Phe Ile
1 5 10

<210> 14

<211> 14

<212> PRT

<213> Homo sapiens

<400> 14

Gly Ser Arg Glu Ser Asn Met Ser Ser Lys Lys Lys Ala Val
1 5 10

<210> 15

<211> 13

<212> PRT

<213> Homo sapiens

<400> 15

Leu Trp Lys Met Phe Ser Pro Lys Arg Asp Thr Ala Asn
1 5 10

<210> 16

<211> 13

<212> PRT

<213> Homo sapiens

<400> 16

Ala Pro Glu Arg Tyr Thr Ser Arg Phe Tyr Leu Lys Phe
1 5 10

<210> 17

<211> 13

<212> PRT

<213> Homo sapiens

<400> 17

Arg Glu Ser Asn Met Ser Ser Lys Lys Lys Ala Val Lys
1 5 10

<210> 18

<211> 13

<212> PRT

<213> Homo sapiens

<400> 18

Glu Ser Asn Met Ser Ser Lys Lys Lys Ala Val Lys Glu
1 5 10

<210> 19

<211> 18
 <212> PRT
 <213> Homo sapiens

<400> 19

Phe Pro Glu Lys Gly Arg Leu Lys Arg Glu Ala Glu Tyr Phe Gln Leu
 1 5 10 15

Pro Asp

<210> 20
 <211> 103
 <212> PRT
 <213> Homo sapiens

<400> 20

Glu Val Val Glu Leu Asn Val Gly Gly Gln Val Tyr Phe Thr Arg His
 1 5 10 15

Ser Thr Leu Ile Ser Ile Pro His Ser Leu Leu Trp Lys Met Phe Ser
 20 25 30

Pro Lys Arg Asp Thr Ala Asn Asp Leu Ala Lys Asp Ser Lys Gly Arg
 35 40 45

Phe Phe Ile Asp Arg Asp Gly Phe Leu Phe Arg Tyr Ile Leu Asp Tyr
 50 55 60

Leu Arg Asp Arg Gln Val Val Leu Pro Asp His Phe Pro Glu Lys Gly
 65 70 75 80

Arg Leu Lys Arg Glu Ala Glu Tyr Phe Gln Leu Pro Asp Leu Val Lys
 85 90 95

Leu Leu Thr Pro Asp Glu Ile
 100

<210> 21
 <211> 21
 <212> PRT
 <213> Homo sapiens

<400> 21

Cys Gly Phe His Met Val Ala Cys Asn Ser Ser Val Thr Ala Ser Phe
 1 5 10 15

Ile Asn Gln Tyr Thr
 20

<210> 22
 <211> 17
 <212> DNA
 <213> Homo sapiens

204210-10055007

1056334.012402

<400> 22
tgggattcgg gctttgg 17

<210> 23
<211> 26
<212> DNA
<213> Homo sapiens

<400> 23
tgttggttg ttacagacat cataaa 26

<210> 24
<211> 29
<212> DNA
<213> Homo sapiens

<400> 24
tgacacagct aaatcctagc atgggcaca 29

<210> 25
<211> 733
<212> DNA
<213> homo sapiens

<400> 25
gggatccgga gcccaaactct tctgacaaaa ctcacacatg cccaccgtgc ccagcacctg 60
aattcgaggg tgcaccgtca gtcttctctt tcccccaaa acccaaggac accctcatga 120
tctcccgga tcttgaggtc acatgcgtgg tgggtggacgt aagccacgaa gaccctgagg 180
tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg 240
aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact 300
ggctgaatgg caaggagtac aagtgaagg tctccaacaa agcctccca acccccatcg 360
agaaaaccat ctccaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc 420
catcccgga tgagctgacc aagaaccagg tcagcctgac ctgcctggtc aaaggcttct 480
atccaagcga catcgccgtg gagtgggaga gcaatgggca gccggagaac aactacaaga 540
ccacgcctcc cgtgctggac tccgacggct ccttcttct ctacagcaag ctcaccgtgg 600
acaagagcag gtggcagcag gggaacgtct tctcatgctc cgtgatgcat gaggctctgc 660
acaaccacta cagcagaag agcctctccc tgtctccggg taaatgagtg cgacggccgc 720
gactctagag gat 733

<210> 26

204270-1399500T

<211> 8
<212> PRT
<213> bacteriophage T7

<400> 26

Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 27
<211> 39
<212> DNA
<213> Homo sapiens

<400> 27
gcagcagcgg ccgccctgag gtggtagagc tgaatgtcg 39

<210> 28
<211> 36
<212> DNA
<213> Homo sapiens

<400> 28
gcagcagtcg actagatgat acttccttaa aagttc 36

<210> 29
<211> 39
<212> DNA
<213> Homo sapiens

<400> 29
gcagcagcgg ccgcatggct ctgagtggaa actgtagtc 39

<210> 30
<211> 37
<212> DNA
<213> Homo sapiens

<400> 30
gcagcagtcg actgtatatt ggttgatgaa agatgct 37

<210> 31
<211> 23
<212> DNA
<213> Homo sapiens

<400> 31
caggtgcagc tgggtgcagtc tgg 23

<210> 32
<211> 23
<212> DNA

20121010-10355001

<213> Homo sapiens

<400> 32

caggtcaact taagggagtc tgg

23

<210> 33

<211> 23

<212> DNA

<213> Homo sapiens

<400> 33

gaggtgcagc tggaggagtc tgg

23

<210> 34

<211> 23

<212> DNA

<213> Homo sapiens

<400> 34

caggtgcagc tgcaggagtc ggg

23

<210> 35

<211> 23

<212> DNA

<213> Homo sapiens

<400> 35

gaggtgcagc tgttcagtc tgc

23

<210> 36

<211> 23

<212> DNA

<213> Homo sapiens

<400> 36

caggtacagc tgcagcagtc agg

23

<210> 37

<211> 24

<212> DNA

<213> Homo sapiens

<400> 37

tgaggagacg gtgaccaggg tgcc

24

<210> 38

<211> 24

<212> DNA

<213> Homo sapiens

<400> 38

204370.1389500

tgaagagacg gtgaccattg tccc	24
<210> 39	
<211> 24	
<212> DNA	
<213> Homo sapiens	
<400> 39	
tgaggagacg gtgaccaggg ttcc	24
<210> 40	
<211> 24	
<212> DNA	
<213> Homo sapiens	
<400> 40	
tgaggagacg gtgaccgtgg tccc	24
<210> 41	
<211> 23	
<212> DNA	
<213> Homo sapiens	
<400> 41	
gacatccaga tgaccagtc tcc	23
<210> 42	
<211> 23	
<212> DNA	
<213> Homo sapiens	
<400> 42	
gatgttgga tgactcagtc tcc	23
<210> 43	
<211> 23	
<212> DNA	
<213> Homo sapiens	
<400> 43	
gatattgtga tgactcagtc tcc	23
<210> 44	
<211> 23	
<212> DNA	
<213> Homo sapiens	
<400> 44	
gaaattgtgt tgacgcagtc tcc	23

204270.4389507

<210> 45
<211> 23
<212> DNA
<213> Homo sapiens

<400> 45
gacatcgtga tgacccagtc tcc 23

<210> 46
<211> 23
<212> DNA
<213> Homo sapiens

<400> 46
gaaacgacac tcacgcagtc tcc 23

<210> 47
<211> 23
<212> DNA
<213> Homo sapiens

<400> 47
gaaattgtgc tgactcagtc tcc 23

<210> 48
<211> 23
<212> DNA
<213> Homo sapiens

<400> 48
cagtctgtgt tgacgcagcc gcc 23

<210> 49
<211> 23
<212> DNA
<213> Homo sapiens

<400> 49
cagtctgccc tgactcagcc tgc 23

<210> 50
<211> 23
<212> DNA
<213> Homo sapiens

<400> 50
tcctatgtgc tgactcagcc acc 23

<210> 51
<211> 23
<212> DNA

20121014 012402 405534

```

<213> Homo sapiens

<400> 51
tcttctgagc tgactcagga ccc 23

<210> 52
<211> 23
<212> DNA
<213> Homo sapiens

<400> 52
cacgttatac tgactcaacc gcc 23

<210> 53
<211> 23
<212> DNA
<213> Homo sapiens

<400> 53
caggctgtgc tcactcagcc gtc 23

<210> 54
<211> 23
<212> DNA
<213> Homo sapiens

<400> 54
aatTTtatgc tgactcagcc cca 23

<210> 55
<211> 24
<212> DNA
<213> Homo sapiens

<400> 55
acgtttgatt tccaccttgg tccc 24

<210> 56
<211> 24
<212> DNA
<213> Homo sapiens

<400> 56
acgtttgatc tccagcttgg tccc 24

<210> 57
<211> 24
<212> DNA
<213> Homo sapiens

<400> 57

```

204210-1935501

acgtttgata tccactttgg tccc 24

<210> 58
<211> 24
<212> DNA
<213> Homo sapiens

<400> 58
acgtttgatc tccaccttgg tccc 24

<210> 59
<211> 24
<212> DNA
<213> Homo sapiens

<400> 59
acgtttaatc tccagtcgtg tccc 24

<210> 60
<211> 23
<212> DNA
<213> Homo sapiens

<400> 60
cagtctgtgt tgacgcagcc gcc 23

<210> 61
<211> 23
<212> DNA
<213> Homo sapiens

<400> 61
cagtctgccc tgactcagcc tgc 23

<210> 62
<211> 23
<212> DNA
<213> Homo sapiens

<400> 62
tcctatgtgc tgactcagcc acc 23

<210> 63
<211> 23
<212> DNA
<213> Homo sapiens

<400> 63
tcttctgagc tgactcagga ccc 23

204240-438350T

<210> 64
<211> 23
<212> DNA
<213> Homo sapiens

<400> 64
cacgttatatc tgactcaacc gcc 23

<210> 65
<211> 23
<212> DNA
<213> Homo sapiens

<400> 65
caggctgtgc tcactcagcc gtc 23

<210> 66
<211> 23
<212> DNA
<213> Homo sapiens

<400> 66
aattttatgc tgactcagcc cca 23

<210> 67
<211> 301
<212> PRT
<213> Drosophila melanogaster

<400> 67

Met Ser Glu Ser Met Ser Gly Asp His Lys Ile Leu Leu Lys Gly His
1 5 10 15

Ser Ser Gln Tyr Leu Lys Leu Asn Val Gly Gly His Leu Tyr Tyr Thr
20 25 30

Thr Ile Gly Thr Leu Thr Lys Asn Asn Asp Thr Met Leu Ser Ala Met
35 40 45

Phe Ser Gly Arg Met Glu Val Leu Thr Asp Ser Glu Gly Trp Ile Leu
50 55 60

Ile Asp Arg Cys Gly Asn His Phe Gly Ile Ile Leu Asn Tyr Leu Arg
65 70 75 80

Asp Gly Thr Val Pro Leu Pro Glu Thr Asn Lys Glu Ile Ala Glu Leu
85 90 95

Leu Ala Glu Ala Lys Tyr Tyr Cys Ile Thr Glu Leu Ala Ile Ser Cys
100 105 110

Glu Arg Ala Leu Tyr Ala His Gln Glu Pro Lys Pro Ile Cys Arg Ile
115 120 125

204270-1889007

Pro Leu Ile Thr Ser Gln Lys Glu Glu Gln Leu Leu Leu Ser Val Ser
130 135 140

Leu Lys Pro Ala Val Ile Leu Val Val Gln Arg Gln Asn Asn Lys Tyr
145 150 155 160

Ser Tyr Thr Ser Thr Ser Asp Asp Asn Leu Leu Lys Asn Ile Glu Leu
165 170 175

Phe Asp Lys Leu Ser Leu Arg Phe Asn Glu Arg Ile Leu Phe Ile Lys
180 185 190

Asp Val Ile Gly Pro Ser Glu Ile Cys Cys Trp Ser Phe Tyr Gly His
195 200 205

Gly Lys Lys Val Ala Glu Val Cys Cys Thr Ser Ile Val Tyr Ala Thr
210 215 220

Asp Arg Lys His Thr Lys Val Glu Phe Pro Glu Ala Arg Ile Tyr Glu
225 230 235 240

Glu Thr Leu Gln Val Leu Leu Tyr Glu Asn Arg Asn Ala Pro Asp Gln
245 250 255

Glu Leu Met Gln Ala Thr Ser Ser Ala Arg Val Gly Ser Ala Ser Gly
260 265 270

Thr Ser Ile Asn Gln Tyr Thr Ser Asp Glu Glu Glu Glu Arg Thr Gly
275 280 285

Leu Ala Arg Leu Arg Ser Asn Lys Arg Asn Asn Pro Ser
290 295 300

<210> 68
<211> 20
<212> DNA
<213> Drosophila melanogaster

<400> 68
atgaggcttg gatcagcttt

20

<210> 69
<211> 20
<212> DNA
<213> Drosophila melanogaster

<400> 69
cctgaagcct gacattccat

20

<210> 70
<211> 21
<212> DNA
<213> Drosophila melanogaster

204270.4885007
1005684.012402

<400> 70
actgcagccg attcattaat g 21

<210> 71
<211> 48
<212> DNA
<213> Drosophila melanogaster

<400> 71
gaattaatac gactcactat agggagatat catacacata cgatttag 48

<210> 72
<211> 48
<212> DNA
<213> Drosophila melanogaster

<400> 72
gaattaatac gactcactat agggagacat gattacgcca agctcgaa 48

<210> 73
<211> 21
<212> DNA
<213> Drosophila melanogaster

<400> 73
tgtaaaacga cggccagtga a 21